Datalink 2 Series

900 MHz Mobile Reader

HMU User Manual

WARNING!!!

Clear line sight between the 900MHz equipment is mandatory. This means that both antennas are visible to each other in order to achieve the distances advertised. If installed with floors or walls between the antennas distances will be decreased dramatically.

Basic RF and Data installation rules MUST be adhered to:

- **Common ground must be installed between all low voltage power supplies**

- **Supplied DC voltage should meet all FCC requirements.**

- **No metal shrouding shall be placed near or around the antenna or the antenna base. Such shrouding will diminish antennas output and the advertised distances will be affected.**

- **Shielded wire with a drain wire should be used in all cases with the drain wire only being connected at the power supply end to earth ground.**

- **DO NOT "HOT SWAP" CARD READERS. Turn power off before removing or changing card readers.**

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Information subjects to change without notice.

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Information subjects to change without notice.

1 General

The Handheld Reader is a 900 MHz-enabled wireless device that is equipped with an OEM reader, which uses Clock/Data or Wiegand signaling. It must be used with a DL 2.

This mobile reader provides 2 or 3 indicators to showing the holder the access status, and an indicator shows user the reader's state.

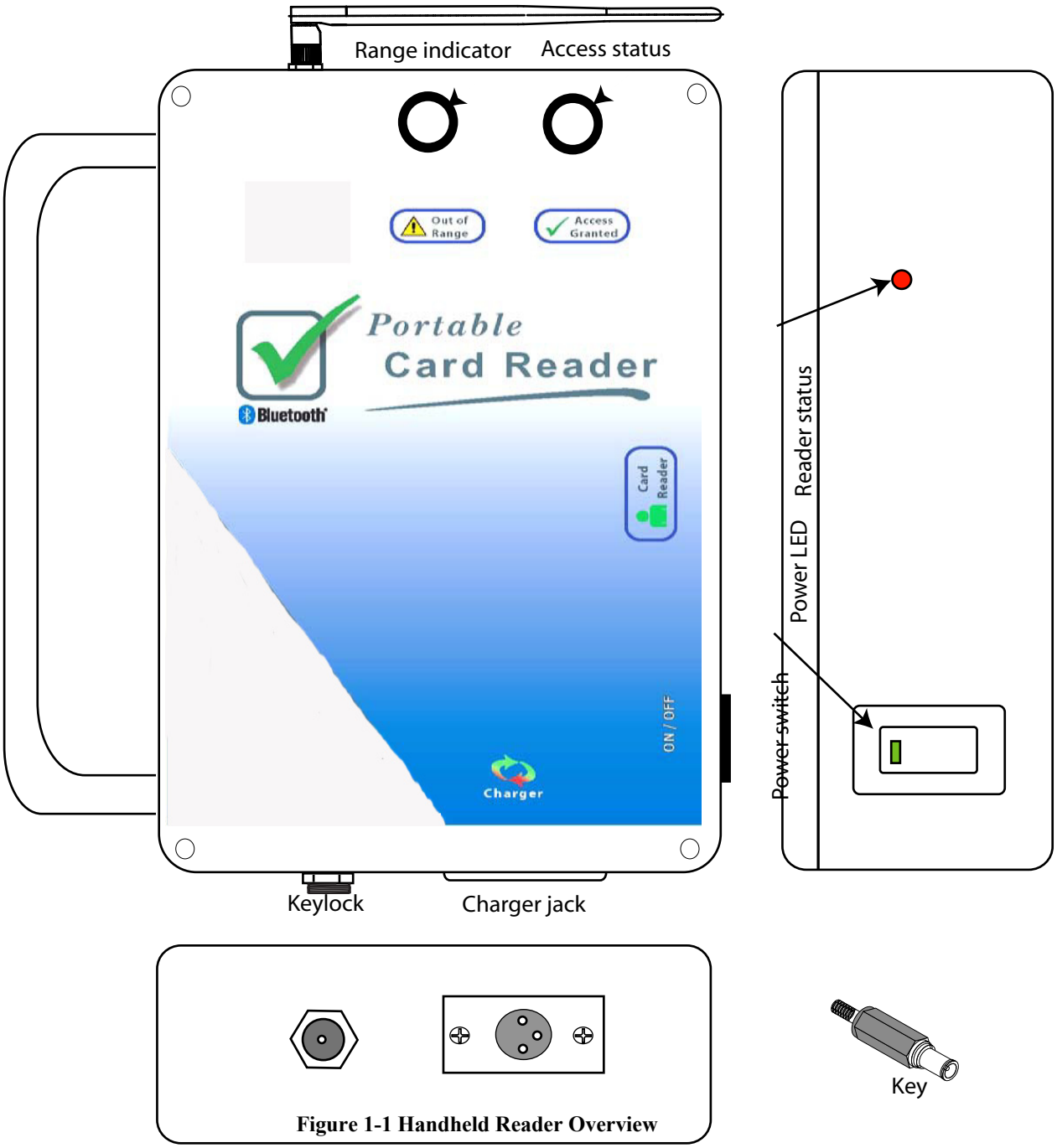

Figure 1-1 Handheld Reader Overview

Information subjects to change without notice.

2 Indicators

The Handheld Reader provides LED's for convenient display of its status. These LED's allow the user to monitor the status of their Handheld Reader and scanned output.

2.1 Power LED (Green) (not supplied on all units)

This LED is located on the power switch, which indicates if the Handheld Reader unit has power. LED lit indicates power. If the LED is not on, check the KEYLOCK or battery.

2.2 Access Status (Red / Green)

This dual color LED indicates the cardholder access status. It will glow red when the cardholder is rejected; and green when the cardholder is granted.

This function MUST be set up by wiring the DL 2 into the host system, and configuration of the host access control system.

2.3 Range Indicator

This LED indicates red when the Handheld Reader is off-line status (Out of range), and it will be green when the handheld reader links to the DL 2.

Information subjects to change without notice.

3 Power to the Handheld Reader

The Handheld Reader is power by a 14.4V, 4400mAh, lithium-ion battery (AVT – 900433). The charging **MUST be done by the Handheld Reader is off**.

CAUTION: This lithium-ion battery charge only with special lithium-ion charger which was supplied with the kit

DO NOT place in fire or heat battery. Take care not to short contacts or reverse polarity. DO NOT crush or incinerate. Fire, explosion and burn hazard.

This battery must be charged by the supplied **charger only.** Any other kinds of charger may cause hazard, and **WILL DAMAGE THE UNIT**.

Figure 3-1 Handheld Reader charger

Information subjects to change without notice.

4 Handheld Reader setting

4.1 Handheld Reader setting

This section is ideal for configuring the hardware or troubleshooting. Turn power off on the Handheld reader and unplug the key before remove the lid.

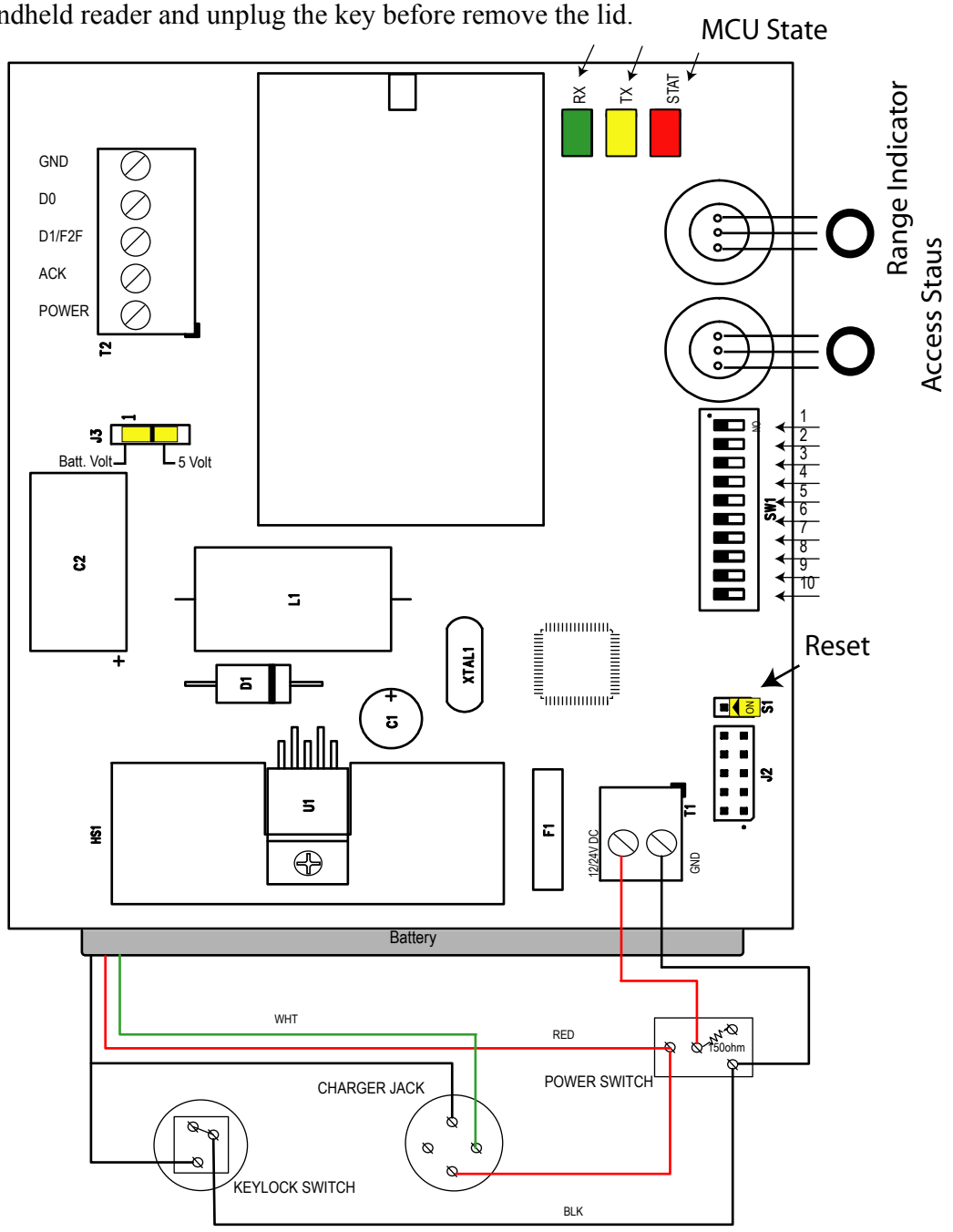

Figure 4-1 Handheld Reader Wiring

Information subjects to change without notice.

4. 2 DIP Switch setting

S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Description
OFF	OFF	OFF	OFF							Channel 0
ON	OFF	OFF	OFF							Channel 1
OFF	ON	OFF	OFF							Channel 2
ON	ON	OFF	OFF							Channel 3
OFF	OFF	ON	OFF							Channel 4
ON	OFF	ON	OFF							Channel 5
OFF	ON	ON	OFF							Channel 6
ON	ON	ON	OFF							Channel 7
OFF	OFF	OFF	ON							Channel 8
				OFF	OFF					Address 0
				ON	OFF					Address 1
				OFF	ON					Address 2 (not available)
				ON	ON					Address 3 (not available)
						OFF				VID 0
						ON				VID 1
							OFF			RF output power 500mW
							ON			RF output power 1W
								OFF		Wiegand reader
								ON		F2F Reader
									OFF	Normal
									ON	Sup-mode

Figure 4-2 DIP switch setting

5 Jumper setting

Setting	Description
	Normal operations
	Reset

Figure 5-3 Jumper setting

Information subjects to change without notice.

6 System Instruction

The Handheld reader is a portable card reader device that MUST be used with a DL 2. Full functions can be realized when the DL 2 is connected properly to the host.

6.1 Input / Output Corresponding

The following is the corresponding list of input /output table for the Handheld reader and DL 2. This table will work for both 1-to-1 and 1-to-2 configuration.

Trigger from DL 2	Lights	Handheld Address	Access LED
IN1	Lights	Address 0	Green
IN2	Lights	Address 0	Red
IN4	Lights	Address 1	Green
IN5	Lights	Address 1	Red

Figure 6-1 I/O Table

6.2 DL 2 Input Wiring

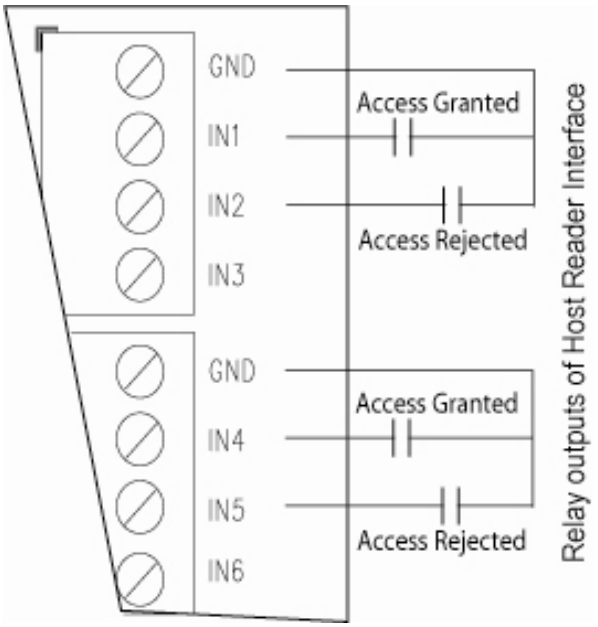

Figure 6-2 DL 2 input wiring

Information subjects to change without notice.

7 Testing and operating

1. Plug the key.

2. Turn on the power switch.

3. When power is applied to the Handheld reader, the Range indicator will glow red. As well, the card reader indicator will flash green three (3) times and beep simultaneously. The reader's LED will then turn red. This indicates that the microcontroller is operating properly.

4. The Handheld Reader is communicating with the DL 2 when the Out of Range LED is green. Present an ID card to the reader, the reader will momentarily turn green and beeps once, indicating that the card was read successfully.

5. A green LED indicates "Access Granted". A red LED indicates "Access Denied".

Information subjects to change without notice.

8 Specification

The module is for use as a low voltage, class 2 circuits only.

Primary power	Battery:	14.4V Battery, 5200 mAh,
Reader Interface	Wiegand: F2F	Data/Clock or D0/D1, 26 – 50 bit
Communication		900 MHz RF OEM Module
	Frequency range:	ISM 902M ~ 928MHz
	Channel Capacity:	10 hopping sequences on 50 frequencies
		Indoor/Urban Range(w/ 2.1 dBi dipole antenna): up to 1,500’ (450 m) Outdoor RF line-of-sight Range(w/ 2.1 dBi dipole antenna): up to 2 miles (4 km) Outdoor RF line-of-sight Range(w/ high-gain antenna): up to 10 miles (16 km)
Output	Output:	2 VISUAL Dual color indicators
Environmental	Temperature:	0 to 50 °C, operating -15 to +85 °C, storage
	Humidity:	0 to 85% RHNC
Mechanical	Dimension:	

Information subjects to change without notice.

Revision History

Date	Revision	Changes
Jan, 2006	1.0	Original Publication

900 MHz Handheld Reader User Manual

January 2006

Information subjects to change without notice.

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Information subjects to change without notice.

Note:

This unit is configured to:

Channel #:
VID #:
Device Address #:

Verify that the Handheld card reader and the DL 2 have the same CHANNEL & VID number. Also if you are using a 900-R remote along with this unit, make sure that the Device ADDRESS is different. (0 or 1 only)

Unit	Channel #	VID #	Address # / Sys

Information subjects to change without notice.